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PACKAGING

THE CAHNERS MAGAZINE FOR DECISION-MAKERS/SEPTEMBER 1988

PACKAGING's 1988 Innovator Awards

New Ideas For Handling Cases

Innovative Inks Improve Coding

Form-Fill-Seal Expects New Era

Automatic Cushioning Reduces Labor 90%

"Fail-Safe" Packaging Keeps Product Sterile

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RECYCLING NEWS

Store Machine Gobbles Up PET

Bottle crusher reads UPC codes

You would expect a man who sells reverse-vending machines to advocate beverage-container deposit laws, and Mike Cosgrove, general manager of Kansmacker, Inc., does.

Michigan, where Cosgrove's company is headquartered, has a "bottle bill" and charges a hefty deposit for aluminum, glass, and plastic beverage containers. Cosgrove told PACKAGING, "You find very few bottles along the highways and byways here." The deposit law has done more than reduce litter, he said. "It has raised individuals' awareness . . . there is a second thought taking place before they throw other things out."

Kansmacker, maker of reverse-vending machines for aluminum cans, is now test-marketing similar machines that accommodate PET (polyethylene terephthalate) bottles. A laser inside the machine reads bar codes on bottle labels to determine whether the bottle should be accepted or rejected. If accepted, it is pierced, crushed, and stored in a bin. Buyers of post-consumer PET have said they prefer crushed bottles because they are more cost-efficient to ship than noncrushed bottles.

The Kansmacker plastic-bottle machine can accommodate bottles in sizes from a half-liter to three liters. Cosgrove said it could eventually also handle 12-ounce PET beverage cans.

Cosgrove said he expects the plastic-bottle machine to be popular with grocers in Michigan and other deposit-law states. He added that it could find use in no-deposit states also as a means of fending off laws that would tax or ban various kinds of beverage containers.

"With our aluminum-can machine," he said, "we've had pronounced interest this year among merchants in nondeposit-law states." These grocers, he said, "go back to their legislative bodies and say they are doing something."

PET-gobbling reverse-vending machines like this one could begin appearing soon in supermarkets located in "bottle-bill" states. The machine reads UPC information, which tells it whether to accept or reject each bottle.

Consumers Ready To Change Habits

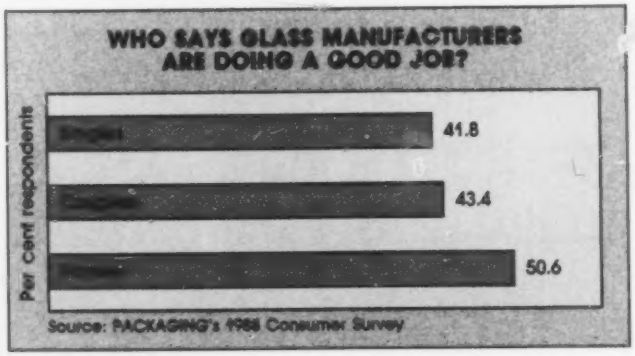
Poll shows they would favor recyclables

According to new research by The Gallup Organization, 54 per cent of all Americans would change their purchasing habits to buy foods and beverages sold in containers that recycle. Just 33.3 per cent of the poll respondents said they would not make the switch.

The survey was commissioned last spring by the Glass Packaging Institute, headquartered in Washington, D.C.

Fully 60 per cent of consumers with incomes over $40,000 said they would switch to a product in a recyclable container if they knew that their current brand choice was not sold in packaging that recycles.

"The Gallup poll results confirm a belief we've held for some time," said Lewis D. Andrews, president of the Glass Packaging Institute, "recyclable packaging sells."



Glass Companies Get High Marks

Consumers say they do good recycling job

Over 46 per cent of all respondents to PACKAGING's 1988 Consumer Survey said they believed glass manufacturers were doing a good job of recycling used glass containers. Less than 25 per cent said the glass makers were doing a fair job, and only 17.1 per cent said they were doing a poor/very poor job.

Significant differences in opinion were reported by respondents in various lifestages, which included singles, couples, and parents—each in three age groups. The highest percentage of respondents in any lifestage rating glass makers's recycling efforts good were parents, with 50.6. Only 41.8 per cent of the singles gave the glass companies that rating.

Of the 1,000 households contacted, 756 consumers responded to the survey with opinions on a wide variety of packaging topics. A full report on the results appeared in PACKAGING's June 1988 issue.

Group Studies Plastic Fuel

Resin company funds incineration project

Scheduled to conclude within a few weeks is a study on the use of plastic waste as fuel for small power plants. Funded by Mobil Chemical Co., the Babcok & Wilcox study is expected to determine whether plastic waste could feasibly be used to facilitate mass-burn incineration.

Robert J. Barrett, general manager of Mobil's Solid Waste Management Solutions group, said plastics have four times the fuel value of the average mix of municipal solid waste—about the same as that of fuel oil. Separating and perhaps pelletizing such waste, Barrett said, would serve a dual purpose. "Using plastics from the waste stream as a fuel source would not only be an important form of recycling; it would also conserve fossil fuels."

In addition, it could raise the incineration temperature, helping to burn all the waste cleanly.

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PACKAGING

THE CAHNERS MAGAZINE FOR DECISION-MAKERS/OCTOBER 1988

HIGH-TECH FILMS BOOST OPTIONS

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PACKAGING NEWS

New York Seltzer Stops Test, Petainer Machines Sold

Constar, PLM sell equipment to Japanese firm, retain U.S. rights

The tale of the Petainer soft-drink can has taken another twist, as both the Japanese manufacturing rights and the only machinery capable of making the PET can are sold to an unnamed Japanese packaging firm. Meanwhile, Original New York Seltzer U.S.A. (ONYS) of Walnut, Calif.—currently the only U.S. user—has announced that it is suspending the can's test market.

Constar International, which owns Petainer Development Company with partner PLM AB issued a press release admitting that Petainer had sustained "relatively large losses" and that it was writing off the sale of the assets of Petainer, believed to consist almost solely of the machinery. However, Constar and PLM have retained their U.S. rights to the Petainer technology. "If the can is successful in Japan, and if certain manufacturing problems are solved, it's possible that another U.S. test could take place," said Constar spokesman James J. Goldman.

In 1985, Coca-Cola USA test-marketed the Petainer in the Columbus, Ga. area. Coke suspended the test in early 1986, saying that it wanted to "focus on developing and improving viable recycling systems."

The official statement by ONYS stated in part, "Consumer reaction to this fully recyclable package has been extremely positive. Unfortunately, the relatively high cost of this PET package has led us to conclude that it will be extremely difficult to price the plastic can competitively with either glass or aluminum at the retail level." The firm said it will deplete existing inventories of the plastic can before terminating its use.

New York Seltzer has terminated its test market of the Petainer PET can.

MEDICAL PACKAGING

Market Segment	$ Million			AAGR*
	1987			
Pharmaceuticals	4750			
Medical devices & hospital supplies	2100			
Medical diagnostic kits	100			
TOTAL	6950	8280	9810	3.6
Materials*				
Plastics**	2255			
Paper and paperboard	2303	2579	2849	3.9
Glass	974	904	864	-1.6
Metals	155	196	246	4.8
Other	118	171	231	6.8
TOTAL	5805	7050	8040	4.0

Values in Table are in 1987 dollars.

Source: Various published data and Business Communications Co., Inc. estimates.
*Average annual growth rate.
*The values are for unprocessed raw materials used.
**The principal plastics used in medical packaging are PVC, styrenics, polyethylenes, polypropylene and polyesters.

Medical Device Packaging Will Reach $2.6 Billion By 1992

Study says aggregate growth rate will be 4% per year for next five years

A bright future for certain segments of the medical packaging market are predicted in a recently released study by Business Communications Co., Inc., Norwalk, Conn.

A growing, aging population with increased need for medical devices and pharmaceuticals, increased plastics packaging, attempts to limit healthcare costs and the trend toward unit-doses and generics are seen as factors driving packaging change in the medical markets.

According to the study, the value of packaging for medical devices and hospital supplies will rise from just over $2 billion in 1987 to $2.6 billion by 1992. Surgical supplies and instruments subsegment of total will grow even faster. Medical diagnostic kits are also slated for healthy growth.

The study, entitled P-107 Medical Packaging, is available at $2,250 from Business Communications Co., Inc. For more information, circle Reader Service No. **422**.

U.S. Aluminum Shipments Up 4.1% in 1987

Containers and packaging account for 27.8% of total

Shipments of aluminum to U.S. markets in 1987 reached 15.0 billion pounds, up 4.1 per cent from 1986 shipments of 14.4 billion pounds, according to data released by the Aluminum Association. Total aluminum shipments, including exports, reached 16.3 billion pounds, up 6.1 per cent from the previous year.

Shipments to the containers and packaging market were 4.5 billion pounds, continuing to make this the largest single category, with 27.8 per cent.

These data, along with additional aluminum industry statistics, have been published in the *Aluminum Statistical Review for 1987*, the association's annual publication. It includes data on shipments, markets, supply, U.S. foreign trade statistics, and world statistics. Copies are available from the association at a cost of $50 per copy, plus $7 for postage and handling. For more information and an order form, circle Service No. **420**.

U.S. Ethylene Overcapacity Potential Seen By 1991

Expansion plans could shift supply/demand balance, says survey

Current expansion plans have the potential to reverse the tight supply/demand balance in the U.S. ethylene market. Supply additions could lead to a return to industry overcapacity by the early 1990s, according to a report issued by Bonner & Moore Market Consultants, Houston, Tex. Ethylene has been in tight supply for the past year, and prices have doubled.

The report is based on a survey of all U.S. ethylene producers as well as an analysis of ethylene supply/demand across the next five years.

"U.S. ethylene producers plan to add about 10.5 billion pounds of capacity by 1993," said Bill Urquhart, manager of chemical planning for the firm. "That would be a jump of about 29 per cent above midyear 1988 capacity levels. Such an increase could result in temporary overcapacity and lower ethylene prices as soon as 1991-1992." For further information, circle Reader Service No. **421**.

RECYCLING NEWS

Plastic Bottle Gets 100 Refills

Some are still in use after 15 years

Is the returnable, refillable milk bottle an idea whose time has come . . . again? General Electric would like to think so.

Currently in use by more than 20 dairies in the U.S. is a returnable, refillable bottle made not of glass but GE's Lexan polycarbonate resin. Some of those dairies have been using the Lexan bottle since the early '70s, but without much fanfare. Will the resurgence of interest in environmental issues stimulate greater acceptance of this container?

According to Bill Dake, president of Stewart's Ice Cream Co., Saratoga Springs, N.Y., the Lexan bottle could account for two-thirds of all milk packaged in the United States by the late '90s. At present, Stewart's is packaging half its 120,000 gallon/week output in the polycarbonate bottle, which has been well-received by consumers who buy their milk from Stewart's 163 dairy-owned convenience stores.

Returnable polycarbonate bottles used by a dairy get a visual inspection. Some of the plastic bottles have been in continuous use since the 1970s.

Dake said he regularly gets 50 to 100 fillings from a single bottle. GE advertises a lifespan of eight to 10 years. Said Dave Handler, market development specialist for GE's GPAX Programs, "The bottles are dated on the bottom when they are molded. I've visited dairies that are using them and found bottles from the 1970s still in use." During that time, some scuffing does occur, Handler said. That can be minimized by molding in textured "bumpers" when the bottle is blown.

Handler said GE has a buyback program in place. "We buy the used bottles back in whole or ground form. We can recompound that material for automotive or other engineering uses. There's a very good market for that."

One potential problem with plastic refillable containers is the chance that consumers will use them to store such things as turpentine. Sniffing machines can be used to find bottles contaminated in this way. In addition, said Handler, "The poor chemical resistance of polycarbonate acts as a benefit here. If anyone has put gasoline or turpentine in the bottle, it will crack." All bottles coming back to the dairies are visually inspected, just as glass bottles always used to be.

Will polycarbonate eventually find its way into the soft-drink and beer industry? Possibly, but not in its present monolayer form. An inner layer of barrier material would be needed to contain the carbon dioxide.

PET Recycler Likes Curbside

Expansion depends on mandatory collection

Only one recycler of post-consumer PET (polyethylene terephthalate) bottles is presently obtaining its feedstock from voluntary collection programs. St. Jude Polymer, Frackville, Pa., recycles bottles collected by residents of small communities in Pennsylvania and Rhode Island.

Steve Babinchak, president, said his company's capacity is now 25 million pounds per year. St. Jude is adding new recycling capacity every four months and expects to reach 150 million pounds by 1995—if sufficient quantities of PET become available.

To get that much of the material, Babinchak said, he is counting not on deposit laws but on curbside collection. He termed the latter system "the way of the future."

Aluminum Leads In Acceptance

Consumers report on local recycling centers

Aluminum is the packaging material most widely accepted by recycling centers across the country, according to a recent survey of 1,000 U.S. households by PACKAGING magazine. A total of 756 consumers responded to the survey with their opinions on a wide range of packaging-related topics.

Among respondents who said a recycling collection center was located near their home, 90.2 per cent reported that that center accepted aluminum. More than 42 per cent of the respondents said their local recycling collection center accepted glass. Only 12.7 per cent said their center took in steel; 9.5 per cent said it accepted plastics.

A complete report on PACKAGING's fourth annual Consumer Survey appeared in June.

Additives Make Plastics Degrade

Sunlight isn't needed to trigger breakdown

Two biodegradable concentrates introduced recently by Ampacet Corp. cause degradation of polyethylene.

The two new additives, Poly Grade II and Poly-Grade III, join other concentrates made by Ampacet for use in photodegradable mulch bags and trash bags. Poly-Grade II is starch based. Poly-Grade III combines starch with additives that degrade in sunlight.

The latter additive, by making plastics biodegradable as well as photodegradable, reduces the amount of sunlight needed to trigger degradation. An Ampacet spokesperson said this is important because some climates do not have periods of sunlight long enough or intense enough to break down photodegradable-only plastics.

New Packages

Brewers continue to innovate. The glass long-neck is back (in non-returnable form) and is available in a two-by-six basket.

Revitalize 'Old' Products

Drink makers innovate to satisfy the consumer's never-ending thirst for something new

By Greg Erickson
Senior Editor

Each year, it is estimated, the average American consumes more than 45 gallons of soft drinks. Add beer, juices and juice drinks, bottled water, drink mixes, wine, and spirits, and the figure rises to more than 95 gallons. You have to wonder why we don't make gurgling noises when we walk.

Driven by the consumer's thirst for anything new and different, the beverage industry today continues to introduce new flavors, brands, and whole drink categories. Though bottlers are striving to standardize their containers, surprising shapes and sizes have been making their debut.

There appears to be no limit to how much the consumer will drink these days at one sitting. Two soft-drink giants are testing 20-ounce glass bottles—a size which some industry insiders see as a possible replacement for the 16-ounce glass bottle. An aluminum company has attracted attention with its 24-ounce and 32-ounce cans. They are likely to appear on store shelves soon with resealable plastic closures.

Aluminum cans of all sizes stand to benefit from increased consumer awareness of the recycling issue. Respondents to PACKAGING's 1988 Consumer Survey said they felt aluminum companies had the best recycling reputation. Glass came in second. Steel placed a distant third. Plastics came in last.

However, the steel industry recently announced plans to work toward improving its recycling record by setting up a container buy-back program. And companies like Wellman, Inc., are making money turning post-consumer PET (polyethylene terephthalate) into carpeting and fiberfill. Reverse-vending machines that accept PET containers are being marketed in bottle-bill states. And one supplier of PET bottles to the beverage industry has proudly developed a 2-liter bottle with a clear base cup made almost entirely of recycled post-consumer PET.

The market for 2-liter PET bottles is growing at a rate of 8 per cent a year; for 1-liter bottles, at 10 to 12 per cent;

A disposable plastic "keg" and reusable pump are now being marketed by a major beer company.

Who's using the recycling issue to their advantage? Everyone: glass, aluminum, PET, paper . . . even steel

and for 16-ounce PET, at 15 to 16 per cent.

Who is using the recycling issue to their advantage? Everyone, it seems. Billboards proclaim that PET is recyclable; soft-drink bottlers who use glass put pro-recycling messages on their labels; aluminum suppliers celebrate their can-collection successes. Steel makers tout the advantages of magnetic separation of used containers from the waste stream. And even a supplier of paperboard multipacks is getting into the act by using the term "biodegradable" in its product promotions.

A move to standard sizes

Historically, the soft-drink industry has grown by means of its ability to give the consumer several choices of containers. "But now," said an executive with a supplier of paperboard for the beverage industry, "the bottlers want to get some consistency in their packages." With filling rates of 2,000 containers/minute and higher the goal, it's no wonder that, as he put it, "new packages are becoming very difficult to work into the system."

He said he believed that soft-drink bottlers might eventually converge on just two industry-standard packages: the 2-liter PET bottle and the 12-ounce aluminum can. If there is to be a third, he said, it will likely be single-serve glass. Naturally, representatives of the glass and steel industries begged to differ.

The glass makers cited great progress being made in lightweighting glass bottles —making them lighter than before but just as strong— through a process called press-and-blow. One glass-industry spokesperson told PACKAGING that this could result in a weight reduction of 2 ounces for the typical single-serve beer bottle.

This sounds promising. But brewers will have to go slowly. Such lightweighting, if done all at once, could give consumers the feeling that something was "just not right" with their favorite brew. Also, lightweighting of beer bottles must be accompanied by an increase in the amount of brown or green colorant so as to keep them looking appropriately dark.

The glass industry also feels good about the long-neck bottle, which has been reincarnated in nonrefillable form. Several brewers and at least one bottler of root beer are charging ahead with the long-neck in either amber or green. One brewer recently introduced a green long-neck with an applied-color, or painted, label that conveys a distinctly old-world feeling. And soon to be introduced by a beer giant for its flagship brand is a 7-ounce long-neck. Presently, that company's 7-ounce bottle is a downsized version of its squatty 12-ounce.

Steel cans may make a new dent in the aluminum-can market, although few of PACKAGING's sources outside the steel industry expected it to be big. Rising prices are making aluminum less competitive relative to steel than it has been, just as rising PET-resin prices have lowered that material's competitiveness somewhat in relation to glass. But steel has slipped in beverage-container market share from 100 per cent in 1958 to 45 per cent in 1978 and to only 5 per cent in 1988. Said the spokesperson for a leading PET supplier, "I think Coca-Cola will give steel every opportunity to